



MINUTES OF THE SUSTAINABILITY COMMISSION

**WEDNESDAY, DECEMBER 12, 2018, 5:00 PM
CITY HALL, ROOM 604 - THE HARRY MAIER ROOM**

A. ROLL CALL.

I. Chair--Seth Hoffmeister; Vice Chair--Ned Dorff; Ald. Randy Scannell; Essie Fels--Transit; Chase Hyland; Deb Hutchison; Julia Noordyk; Stephanie Ortiz; Mark Walter

Ned Dorff and Mark Walter are both excused; Chase Hyland (absent); Stephanie Ortiz will come at 5:30

B. APPROVAL OF THE AGENDA.

I. Approval of the Agenda for December 12, 2018.

Moved by Ald. Randy Scannell, seconded by Transit Staff Essie Fels to amend
Motion carried.

Yes- Randy Scannell, Essie Fels, Seth Hoffmeister, Debora Hutchison, Julia Noordyk, No- None,
Abstain- None Agenda, moving item D 3, to D 1

C. APPROVAL OF MINUTES.

I. Approval of Minutes from the November 1, 2018.

Moved by Debora Hutchison, seconded by Ald. Randy Scannell to approve. Motion carried.

Yes- Randy Scannell, Essie Fels, Seth Hoffmeister, Debora Hutchison, Julia Noordyk, No- None,
Abstain- None

D. INFORMATIONAL.

1. Green Tier Resolution Draft, and approval process.
2. Presentation by Julia Noordyk "Improving water quality and protecting community assets with green infrastructure through code audit" (15 minutes).
3. Presentation by Department of Public Works on City of Green Bay's current storm water management program.

E. REGULAR BUSINESS.

1. Discussion with possible action for the City of Green Bay to explore eligibility to apply for the "Urban Nonpoint Source and Storm Water Management Grant Program" by the deadline (April 2019).

Moved by Ald. Randy Scannell, seconded by Debora Hutchison to refer to staff. Motion carried.
Yes- Randy Scannell, Essie Fels, Seth Hoffmeister, Debora Hutchison, Julia Noordyk, No- None, Abstain- None

2. Discussion with possible action on assessment of the City of Green Bay's storm water infrastructure, grant request for baseline analysis, green infrastructure pilot projects, and long-term strategy for green infrastructure and storm water management.

Moved by Julia Noordyk, seconded by Debora Hutchison to receive and place on file. Motion carried.

Yes- Randy Scannell, Essie Fels, Seth Hoffmeister, Debora Hutchison, Julia Noordyk, No- None, Abstain- None

F. ADJOURNMENT.

Moved by Transit Staff Essie Fels, seconded by Seth Hoffmeister to **adjourn**. Motion carried.
Yes- Randy Scannell, Essie Fels, Seth Hoffmeister, Debora Hutchison, Julia Noordyk, No- None,

Abstain- None

VERBATIM MINUTES

- Press record.
- OK.
- And then you power it off.
- Yeah, awesome thank you.
- OK.
- I'll just do it the next meeting. I am ready.
- Alright, it is 6:01, are you logged in?
- Now do you have to be logged in for you to...
- Yes it should be logged in. Wait, I can log you in hold on.
- Oh, I can do it. I remember my password.
- Ouch.
- OK, you're in.
- Great.
- Alright cool it is 5:02. We will call this meeting to order. We'll start with the roll call. I am present, Ned is excused, Alder Scannell?
- Here.
- Essie Fels?
- Here.
- Chase Hyland? Not here, not excused.
- Deb Hutchison?
- Here.
- Julia Noordyk?
- Yes.
- Stephanie Ortiz will be showing up at 5:30, and Mark Walter is excused. Alright we'll move on. To approval of the agenda.
- Motion to approve.

- There is the motion to approve, is there a second?
- Second.
- There's a second. Do you want to amend it?
- Yes, I'd like to move item D3 to the top of the pile, D1.
- There's a motion on the table to move D3 to D1. Is there a second?
- Second.
- There's a second all those in favor--
- Aye
- Say aye. Aye, anybody opposed? The ayes have it. All right, back to the original motion to approve the agenda.
- Didn't that motion affect that?
- Oh, that's--
- To amend the agenda. I make a motion to approve the amended agenda.
- All right, and is there a second?
- Second.
- All right. All those in favor of approving the amended agenda say aye.
- [Group] Aye.
- Anybody opposed? All right, we will move on to approval of the minutes from November 1st, 2018. Is there a motion?
- Oh, approval of--
- I approve.
- Second.
- I move to approve.
- All right, there's a first and a second. All those in favor say aye.
- [Group] Aye.
- Anybody oppose? All right, well we will move on to Section D, informational. We would like to welcome the folks from the Department of Public Works to give a presentation about what they're working on in regards to stormwater management.

- [Steve] Well, this is not exactly what I thought we were being agenda-ed for, so, as far as what our stormwater management program looks like, I'm going to let Matt Heckenlaib, the Utility Manager, handle that. The discussion that I had with Celestine a few days ago, that I wanted to have with this body, is a little bit more all encompassing, and that discussion involves how this commission is moving forward in what things you folks are working on currently. Back around 2005, there was a Sustainability Task Force that was convened. Subsequent to that task force, in 2008, 2009, City of Green Bay applied for an energy efficiency community block grant that was federally funded and granted to the city. That grant we received was one million three thousand dollars, and it funded a large number of projects. There were more projects that were requested, obviously, than what the grant could fund, so I think it would bode well for this commission to study both the prior Sustainability Task Force and the information that went into the grant application and the actual execution of the grant, that ran from 2009 through 2012. Further, I think you folks need to sit down with the department heads to have discussion on what sustainable practices are currently being implemented across the board by different departments, and, by comparing that with some objectives that you folks may have, that will constitute the bulk of the research you need to complete a gaps analysis, and then you can focus some time and effort on the gaps, because what it appears, based off of what I am seeing on the agendas, you folks are going off in some directions already, and some of those are not the purview of this commission. OK, some of those are already handled, by Ordinance, through departments. Specifically, the two items that you're going to be talking about under Regular Business Item E, that's us, that's what we do, so it's really not relevant for this commission to be handling, or discussing about action items, relative to our stormwater management program, at least not until you've had an opportunity to talk to us about what's going on, and talking about applying for grant funding, unless you have a project in mind, definitely not advised, and, if you guys are gonna be selecting projects, we definitely want you to run that through us, because your project selection may be counter to something else we're already in process of. So what I'm trying to do is make sure that your efforts are focused where they need to be, before you get too far down the line, and we end up running counter to what other departments are currently doing. With that in mind, I can let Matt give you an overview of where our water management program is and some of the sustainable practices that we're already implementing.

- [Matt] Let's see, I was just given notice about 30 seconds ago that I'm doing this presentation.

- No costumes?

- No costumes, I'm in my costume. A real brief history on our stormwater management program. In the late 1990s, prior to that, we'll go way back, EPA obviously, has created the Clean Water requirements, and they put in requirements that construction sites and industrial permits need to be developed. In the late 1990s then, they were identifying that municipalities need to take a look at storm sewer discharges to clean up water coming off of those sites, or out of storm sewers, and, in the late 1990s, the city was notified by the DNR that we were going to be targeted as a Tier one community, along with the Greater Green Bay area, to start putting together a stormwater management plan, and applying for the MS4 permit, the municipal separate storm sewer systems permit. So we applied in late 1999, to the DNR. We never got a formal response, because, back then those permits were negotiated. DNR didn't have the staff, so, ultimately, we continued moving forward, and in 2001, we adopted our first draft of our stormwater management ordinance. It started being implemented December of 2001, and it's still being enforced today. I've been lucky enough to, I didn't write the actual ordinance, but I was purview to enacting the requirements thereof, so I am very well versed in our ordinance. It was painful. It was something new that Green Bay didn't fully understand, not only the city, but also consultants and developers and property owners, so it's been an obvious learning curve. Ultimately, in 2006, the city got permitted from the DNR, for our MS4 permit as a Tier Two Community, communities over a hundred thousand individuals. What does that mean? Well we had to create various ordinances for stormwater management post construction, for erosion control, for illicit discharge. We had to do public education and participation. We had to do annual budgeting and permitting, or reporting back to the DNR. We've been doing that since 2006. It's been a fun task. We've gone through two permit cycles now, and we'll be going into our third permit cycle. One of the other permit requirements, back then, was City of Green Bay, well all permitted communities, needed to reduce sediment loading from our storm sewers and city, going into waters of the state, waters of the U.S. by 20%. In order to figure out how we were going to do that, we hired

a consultant to model the city, using a computer program called SLAM. Back at that time, I think we were at about four percent of the 20%, and therefore we had to start doing some projects to build up to that 20% mark. We did achieve the 20%, ultimately. The next goal, at that time, was a 40% reduction of sediment coming out of our storm sewers and discharging into the waters of the state, waters of the U.S. In 2010, Governor Walker decided to strike the 40% requirement, and replaced it with language saying communities need to now adhere to TMDL requirements, total maximum daily load, which is, long and short of it, more restrictive than the original 20 and 40% sediment reduction. On a citywide basis, we're looking at upwards to 60% reduction of sediment, and a 40% reduction of phosphorus. It's kind of general numbers, but that's the numbers that have been placed on the city, and it's on a per drainage basin basis. The city is within seven sub watersheds to the lower bay and the Fox River. We just had our consultant remodel the city again, to find out where we're at. I don't remember the number off the top of my head, but I believe we are at about 28% sediment reduction, on a baseline condition from 2004, so we've made progress, but we also are removing somewhere around 20% phosphorus. So, again, we're making progress, but we're nowhere close to meeting the ultimate requirements of the TMDL. Part of this report also stated then that, while here are some potential projects that we could do to make further progress meeting our TMDL goals, and that's just strictly a water quality goal. The report identified 18 projects, at an estimated cost of about 100 million dollars. Oh yeah, that only gets us about half way there to our TMDL requirements, and that's doing wet ponds, that's doing some bio filtration. That's keeping existing roadside ditches, where practicable. All of our easy projects have been gobbled up at a estimated cost of about 10 million dollars, that we've stuck into our program to date. Some of the projects that we've identified, DNR had already come back and said, yeah, the likelihood of you doing anything over and above, in these areas, will be difficult, because they're inline systems, there's already habitat and environmental restrictions that permitting those projects would be difficult if not impossible, so we have uphill challenges. We've identified some of these projects that, OK, we've identified parks where we've wanted to install wet ponds, wet ponds being the most economical stormwater management feature available, you get the most bang for your buck. Anything over and above a wet pond, you're paying more and getting less benefit, so to speak, so we're taking a look at some underground detention facilities, and things of that nature. So, on a stormwater quality side, we have a lot of hurdles to address. On a stormwater quantity side, obviously the past August, September, we were hit with significant rain events, especially on the east side, where we saw significant flooding in the Main Street area, Mason Street area. We saw some flooding in August, on the near west side, on Shawano Avenue in Seymour Park. One thing to note there is, I don't care how big my storm sewer system is, those events happened, there was so much rain that happened in a very short period of time, I could have enormous storm sewers, those sewers wouldn't have handled this amount of flow. So, whether we do green infrastructure, we do stormwater management ponds, these ponds only work, assuming that the storm sewer's getting the water to those ponds, are capable of conveying that water. So, even though we had this flooding, even if I upsized my storm sewers, two ponds, two greenways, two whatever, there're still deficiencies that you're gonna see these ponding waters in these adverse rain events. Under normal rain even conditions, for the most part, my storm sewer system works phenomenal, so. I did prepare a report that will be presented to the Improvement and Service Committee, potentially in January, that outlines more of the water quantity side of things. Right now it's still in a draft state, so I don't wanna speak too much regarding that report at this time, but it's, again, to make some improvements to the stormwater quantity. We're looking at significant dollars there as well.

- [Steve] Now Matt talked to you a lot about the capital investment that we've made, over the last decade, decade and a half. When we start taking a look at things, the way that we design these projects, the way that we implement these projects, we're looking at life cycle, so you don't just build a facility and say you've accomplished your objective, it's now green and it's sustainable. There's a maintenance aspect that goes along with this, otherwise you've built it, but it's not sustainable, so, with a lot of these facilities, we're looking at routine maintenance. We're looking at, with wet ponds for instance, in order to for that pond to continue to function the way that it's intended to, there's periodic surveys to ensure that we have not accumulated significant sediment accumulation on the bottom of the pond, to the point where the pond doesn't function the way that it needs to function any longer. Periodically they do need to be dredged and restored back to their native state, so that there's enough capacity in there to settle the solids out, which is the primary function of the pond. We want these ponds to blend in. We're building more and more facilities that are in

urban environments, so they need to be compatible with surrounding land uses. So, from a sustainability aspect, we already are working with wildlife biologists, wildlife ecology firms, to select suitable plant species that are native to this area, so they are drought tolerant, they are resistant to winter conditions, they are resistant to the wildlife that's here. We work on maintenance of that with prescribed burns and selective hand removal of invasives, as opposed to using chemicals. One of the things that erodes the efficiency of a pond faster than anything is a hole. Well how do you get a hole in a pond? Muskrats. We have been for seven years, eight years, we have been applying the use of a trapper that physically goes out and removes muskrats that are damaging the ponds, disposes of the muskrat to keep the pond functioning. We are working on a very aggressive plan, now that we've started getting where we need to be with our sanitary sewers, on a storm sewer cleaning program to get the storm sewers back to a position. Again, with the burns and some of the vegetation management, that's all being accomplished without the use of herbicides, pesticides. So we are looking at things from a holistic perspective, and we are looking at things from a long term perspective. As lot of the information may not necessarily be readily available in the public, so it may not be as evident what sustainability practices we are currently undertaking. And again, I think that goes back to the earlier statement that I had, that I think, before we get the cart in front of the horse, I really think it would be advisable to sit down and meet with folks. If you've got ideas, start doing the investigation with the departments to find out what's going on, where your gaps are, so we don't get into action items where we might be either counter to what's going on, counter to what direction that department or the city might be moving, or if you're trying to replicate efforts that are 10 years in our rearview mirror.

- Questions on our stormwater program?

- I have a question. Thanks for coming, and very interesting. The smart growth plan lays out a lot of things that were planned in 2002 or 2003, and would this be a place for us to find a lot of that information, or is that out of date?

- The smart growth plan is primarily land development, as far as types of residential, commercial, how do we see the city expanding. To the best of my knowledge, it really doesn't get into the stormwater management aspect of things. Within our stormwater ordinance, any development needs to, well any development or any land disturbance greater than a half acre requires stormwater management to be designed, implemented and maintained. Part of that maintenance is, they need to enter into a maintenance agreement with the city, so that we have a legal document to go back to the owners and say, you're not doing it. You can do it, or we're gonna do it, and we're gonna charge you for it, so it gives us that legal authority. In some cases, we even go below that half acre aggregate, depending on if there is existing flooding, or known safety issues, or the downstream sewers can't handle it, erodibility of waterways, and things of that nature, so we take a look at where the development is occurring and what potential impacts it has on the existing sewer systems and environment.

- [Steve] From a large scale sustainability effort approach, that's definitely a document that I think is one that you should take a look at, but as you identified, it is a 2002 or so document. It's knocking on the door of 20 years old, there is some dating to it, so it's definitely not the be all end all authoritative source of information, which again, especially as it relates to sustainability, I suggested taking a look at the work that the task force had done back in 2005, and again, with some of the implementation, not only the implementation, but the application for the EE4, the EE CVG grant, that came in 2008, when the grant came in 2009, because that identified a lot of these sustainable practice type initiatives that the city was interested in, that may not have necessarily fit within the grant opportunities. That was more recent, more relevant than the Comp Plan from the early 2000s.

- Thank you.

- And again, even going back to that document, it's 10 years old already. It's hard to believe that that much time has gone by. So there are things that are happening on a regular routine basis, that departments are currently doing, that I don't think people understand, OK? and to prevent us from plowing old ground, and to make sure that what your efforts are focused on are in line with where the city's will be, that's where I think it

would be helpful if you folks sat down and talked to departments about, 'cause you never know where this is gonna come up. When I was having a conversation with Celestine, I had mentioned to her our resurfacing program, our asphalt resurfacing program in residential areas. What's sustainable about an asphalt resurfacing program? Approximately 20% of the asphaltic material, the black stuff that makes blacktop black, is reclaimed asphaltic pavement in every ton of asphalt that we lay, so we mill up the old asphalt, that asphalt is reclaimed and put right back into the mix, to lessen the dependence on virgin oils. With our sewer programs, every time you see the crews out there digging a trench and putting sewers in or water mains, the stone immediately in contact with the pipe is what we refer to as bedding, and then, once you get above the pipe that's backfill. Because of the materials we use for pipe, we have to very strictly control the quality of the bedding material, so bedding material, 99 times out of a hundred, is virgin stone that comes from a crusher or from a pit or a quarry, but, once we get away from the pipe, we're not in direct contact with the pipe anymore, virtually 99% of our backfill material is reclaimed material. So, when you see a street being dug up, all of the buildings being demolished, all of that waste concrete and brick and those harder materials. Peter's Concrete, up here, up on The Bay, they got these large piles with crushers and trommel screens and everything else, that's where all that gravel comes from. So even our sewer programs already have a large sustainability component to it, that we're using reclaimed materials, so we're not depleting scarce resources, already. And those are the kind of things that the general public's just simply not gonna think about, and it's probably not gonna come out originally, but these are gonna be repetitive discussions, and one question is gonna lead to another question, and gradually you're gonna start peeling the layers of the onion back.

- Yeah, you guys should advertise.

- [Steve] What's that?

- You should advertise.

- Communication's not done.

- [Steve] Well, we should, and it's somewhat said tongue in cheek, but there is a significant element of truth to it. Department of Public Works is our own worst enemy, when it comes to public relations. We are not in the forefront. We are not to ones who are standing out front of news cameras all the day, regardless how many time you see me on Channel Two. That's them, that's not me. The reason for that, quite honestly and quite brutally, we're too busy out doing things. We are an action oriented group of people, so rather than stand around and talk about it, we're out there on to the next project. And maybe we need to be better about telling folks what we're doing.

- Hire PR.

- [Steve] What's that?

- Hire a PR guy.

- [Steve] I would love to, but my, County Council just severely limited my budget again, so...

- Well Green Bay Utility just hired somebody to do communication for them, but...

- [Steve] But, Alder Scannel makes a light hearted point, but it's one that we're gonna continue to come back to throughout the course of this meeting. That's one thing that you're gonna hear us talk about is money plays a significant role in this, and green costs a lot. So we have methods of how we're integrating sustainability and environmentally sensitive practice in what we do, but expanding beyond what we're currently doing is very difficult to us, because I can't fund what I need to get done. I certainly can't afford 40% surcharge on top of that to get somebody's stickers say certified green. That's other projects I can't get done, because I paid a premium for this one.

- I'm sorry. I'm so sorry I have to go, because, like I said, I didn't realize I had a conflict until I woke up in the middle of the night, Oh my god, I have a conflict today, so just continue going on with the meeting as is. You have all the documents in your Boardview, that you can access. The stormwater management ordinance is attached to this item. I've got whatever I have for you attached to that item. I see Julia has some handouts. Please make sure--

- I have a presentation too.

- Yes.

- [Julia] Does someone know how to do that?

- PDF, I have a PDF that you gave me, so it should be--

- [Julia] That's not mine. OK, I'll use that, but that wasn't mine. I did it more for...

- She didn't to do a presentation for--

- So, all you have to do, Julia, is turn on the TV and touch. Do you have?

- Yes.

- Yeah, so you can just attach it to a laptop, one of these things here. Yes, thank you, and then it will show up here.

- [Steve] There's universal adapters over here.

- Yes.

- All right, thank you.

- And then, can you please be sure that I get one of the handouts there, for the record?

- Sure.

- That's your job.

- I'll hook up them and you go to class.

- Thank you so much, I'm so sorry to have to rely on you.

- That's all right, have fun.

- But yeah, I have that thing I have to do.

- If I don't see you, Merry Christmas.

- Yeah.

- Thanks, Celestine.

- You guys have questions? Underground retention, which sounds wicked. Is that like tanks or cisterns or something?

- [Steve] It's a combination of efforts. One project that we did work on, with Premier Packers Incorporated, there is a large, concrete, underground storage tank located in the northeast corner of the parking lot, at the corner of Lombardi and Oneida, several hundred thousand gallons.

- It's roughly the size of a football field, about 15 feet deep, under the pavement.

- Oh wow.

- And you don't even know it's there.

- There's one under the new Festival Foods too?

- There is an elongated detention system in the Festival Foods.

- They've got a pool? An open pool, we could have just--

- [Matt] Uh...

- [Steve] Some of the other things that we have used for--

- I don't think you wanna swim in storm water.

- [Steve] For underground retention is simply to oversize several segments of pipe, so if your storm sewer is a 20 inch diameter storm sewer, and that's what's necessary to hydraulically convey the amount of stormwater, you take that 24 and you upsize it to a 60. So that water sits and pools in there, and the pipe is buried underground. You keep the top of the pipe elevation the same and locate your 24s up near the top, so it basically creates a belly underneath, and that provides some retention time, drops out the heavier solids immediately, provides some primary treatment. But the other thing it does, it slows the water down, creates some detention time, or what we call time of concentration, and that buys... When you look at water, not all water gets into the pipe at the same time. Some water gets there early, some water gets there later, and that same pipe gets use multiple times during the rain storm. Make sense?

- Yep, yep.

- [Steve] So, what ponds do, these underground retention basins, a variety of other things. You're taking certain water and you're slowing it down, so that this water has a chance to get through the pipe and out, creating, in capacity, in that pipe to take other water. That way you can use a 24 inch diameter pipe, instead of having to put a 60 inch pipe underground.

- Another smaller version of underground detention, that is actually up in Bay Beach,. Just some of the new ride that went in two, three years ago, we put some small underground detention in, and then, again, we're looking at some other areas that we're considering some underground detention. Two years ago, we did a green parking lot for Bay Beach, on the far west end, with bio filters and permeable pavement.

- Just what's a bio filter, what would be there?

- Well, that's why I was wanting to go first.

- OK, nevermind.

- You're taking mine.
- It was just a question.
- [Steve] We've used a variety of different, what are referred to as best management practices, BMPs.
- [Julia] You saw them at Saint Marys Hospital. In the parking lots, there's bio retention. They help the water off.
- One of the other things, I think Julia's going to talk about in her presentation. When the WaterMark was constructed, there had to be something, they were required to do something, but, given where that building was, integrating part of the old Prange's, then part of the mall expansion from '82, that eventually became the Children's Museum in Hagemeister Park and the stuff fronting Washington street. It was a redevelopment site and it was large enough that it required stormwater management, but there was no way that we were going to intercept stormwater between there and the discharge point, which was the river. There simply wasn't,
- Wait, where was this?
- [Steve] Well, one of the things that we've put in is directly in front of the Children's Museum of Green Bay. There is a bio filtration tree there.
- A Filterra system.
- Yeah, OK.
- [Steve] And The Children's Museum put a display inside talking about that bio filtration tree.
- I've never read that, I've been there a lot.
- [Steve] It should be right, and I don't know, maybe it's not there anymore. One of the issues that we followed was, the media that's necessary to do the stormwater management, and then the tree species to put in the pit, weren't real conducive to Wisconsin winters, and not salt tolerant at all.
- Yikes.
- [Steve] And, if you're in an urban environment, the downtown folks expect that, in the winter, you should be able to walk and not slip, so there's a lot of salt usage.
- The other thing, those trees aren't very conducive to our snowplows or vehicles. They've gotten clipped off before.
- [Steve] They're obstacles.
- Along with that, right by the parking ramp for the Children's Museum, they put in a proprietary device that helps settle out some of the sediment, and then, directly to the west of the old Prange's, the old, the WaterMark et cetera, there's something called CityDeck, where we actually have permeable pavers integrated in that walkway, in that greenway. So, I wouldn't call it a true permeable paver, because there's not the traditional amount of open gaps, but there is some infiltration that does occur, some filtration that occurs with permeable pavers. But yeah, up at Bay Beach, it's actually permeable asphalt that was used, so we go from regular asphalt to permeable asphalt to a bio filtration system, and then keep repeating that over and over. So, and we got a grant to do some of that, but, going back to cost, that project was a little over a million dollars to do 600 stalls of parking lot. A traditional asphalt parking lot would have cost about 250,000, so it's roughly four times the cost. Again, the most economical stormwater device is a wet retention pond, but they take up a lot

of land space, so there's negatives that go along with that. As soon as you start going beyond that, you start getting into other best management practices that the cost continue to goes up. Other questions?

- You have a lot of muskrats?

- Yes.

- [Steve] Last year we trapped I think a hundred and nine.

- The betas, yeah, their populations are. Although they got a disease recently this year, like a virus or something.

- I have to apologize for that. It's all my grandma's fault. She died and she used to eat muskrat.

- [Steve] Oh. So she's not keeping the population in check successfully any longer?

- She's not keeping the population down anymore, so I apologize.

- [Steve] OK.

- Well thank you both for coming.

- Yeah, I really appreciated it.

- Starting the conversation. Can you guys, other than yourselves, recommend other folks in the city to meet with to continue this conversation?

- [Steve] Again, I think it's very much taking definitely Park, Rec and Forestry.

- Yeah.

- [Steve] But, like I said, I think every department is somebody you should be talking to, because there may be sustainable practices that those folks are utilizing that simply are flying under the radar right now. Like, you got transit. We get all those guys using vegetable oil in buses, instead of diesel.

- It'll smell like one giant cheese curd?

- [Steve] It'll smell like Central Florida. Mears buslines in Florida runs almost exclusive biodiesel, and they generate most of the biodiesel on the Walt Disney World properties in Orlando.

- Pray he doesn't have a lack of corn this year.

- Walt Disney World is an incredibly closed loop. Their facilities at Epcot, for food production, is where most of the food, utilized in the resort properties, comes from. It's really fascinating.

- Yeah, I guess I would just, I really appreciate your comments about talking to the different department head, and this is pretty early on, I would say, and, if anything, I think the committee would rather help support efforts, some of those things that you're the doers, can we be like the help, like push things, maybe, help get grants to do more stuff, or help, maybe, go to the council and do recommendations that would help your departments do more of the things you wanna do. So, I think, I was just saying put that out there.

- When we fund the commission, that was how I was thinking of it, and that would be working with you.

- A collaboration.
- It would be communication. Even if we're not doing something that you're doing, we'd want your expertise, so yeah.
- Beth?
- I have a question.
- We should open the floor then?
- I'm sorry.
- Motion to open the floor?
- Second.
- So moved.
- [Beth] Sorry.
- We gotta vote.
- All in favor say, aye.
- Aye.
- [Beth] Why does the City of Green Bay have a TSS requirement of 80%? Is that something that you guys deal with, or is that something else?
- It's actually set by a report called the TMDL, totally maximum daily load, that is approved by both the EPA and the DNR, and those limits were established through various modeling efforts to try and improve the fishability, swimability, drinkability of our water resource, within the Lower Bay and the Fox River, along with all the tributaries, and the numbers that were basically provided is, the original number, again, was an arbitrary 20 and 40%. The governor, in 2010, said that that arbitrary number is just that, arbitrary, there's no basis behind it. However in the TMDLs there's modeling, there's research to establish those numbers,. And so, again, on a citywide basis, we're looking at over 60% sediment reduction, TSS reduction, and it varies a little bit from basin to basin, but on a generalized sense, it is that, and then the other pollutant of concern right now is phosphorus, so that's why A second TMDL requirement out there is phosphorus.
- [Steve] I think the answer to your question may be twofold. The requirements that we have to meet as a city are dictated to us by EPA and DNR, as Matt indicated. How we get there is what our ordinance reads, and the numbers that are in our ordinance, are numbers that we established as a city. Why is there a difference there? Quite simply, the rules came into effect after the city was largely developed, and there's large parts of the city that we simply can't go in and tear down half a city block of urban development, in the downtown area, to put a treatment device in. So, in a very simplistic way of looking at it, if, as a city, you need to meet 50%, is your goal, OK? And half of your city is developed to the point that you get nothing, then the remaining half, you have to get 100% so that, on average, they come up to 50, make sense? OK, that's why the ordinance is written the way that it is. New development and redevelopment has to get up here, so that, when we average it out across the city, we're meeting the goal overall.
- Anything else?

- Any questions? Do we have to?
- Close the floor?
- Close the floor motioned.
- Second.
- Second.
- All those in favor of closing the floor?
- Aye.
- Aye.
- All right. Any other questions for our guest speakers here tonight?
- No, thanks.
- Thank you guys for coming, we really appreciate it.
- [Steve] We'll stick around.
- Awesome. All right, well next on the agenda is just the update on the Green Tier Resolution draft. So Deb and I got together back in November, was that? And we put together a resolution that would have the City of Green Bay join the group here, Legacy Community Program. We, they provided a really great sample resolution, but we clarified the Sustainability Commission's role in that program specifically, so that is within that agenda item, you can read. And the will, I'm not entirely sure if that's on. Do you know if that's on a future council schedule?
- We should make a motion to send it on to, probably if we make a motion, I make a motion, for the council to approve the Green Tier Resolution draft.
- All right, well there's a motion. Is there a second?
- Second.
- All right, so all those in favor of sending the resolution to council, say aye.
- Well you know, actually, I guess it can go that way. I mean, actually, if we approve it, then council approves what we do or it doesn't. They can send it back to us or whatever.
- [Steve] I think, actually you're gonna have to send it to one of the standing committees.
- Right. Right, so we should send it to Protection or I and S?
- [Steve] Either of those, I think, would be applicable.
- Except I and S you've got a little more expertise.
- [Steve] But under the charter ordinance establishing the commission, the commission doesn't have action power.

- Right, everything's gotta go through Council.
- [Steve] Well no.
- But to Council, it should go through committee first.
- [Steve] You have to take it through a standing committee. This commission is advisory.
- Yep.
- So the I and S?
- I would think I and S would be a good one.
- [Steve] If you want to take it to I and S, you could put it on I and S. If you wanna bring it through Protection of Policy, I don't think either one of them will lose.
- I think your input would be more, appropriate that Protection of Policy.
- [Steve] Yeah, that's fine.
- OK, so motion to send this to I and S.
- All right, we had another motion on the floor.
- I withdraw that motion.
- Motion withdrawn.
- Motion to send this to I and S.
- OK, and can you, the alphabet soup for us?
- [Steve] Improvement and Services Committee.
- [Julia] And can you explain why you think... I don't care, just understanding why you want to send it to them?
- Protection and Policy has to do with more licensing and everything, and it's a catch all for anything that doesn't fit anywhere else, but I think this fits into I and S, Improvements and Services. It's got more to do with public works.
- [Steve] It's the oversight committee for public works, and it also handles items within the public's right of way.
- [Julia] OK.
- Yeah, so I think, I think it's more appropriate there. If it's, you could say this or this, Protection of Policy would be last. I mean, if it's another committee that's more appropriate, and if it's directly related to liquor licensing or something.
- [Julia] That's fine, I was just wondering, what your rationale was.

- It's just a catch all for anything that doesn't fit, and I think it fits.
- Sounds good.
- Yeah.
- All right, so the motion is to send it to I and S Committee. Is there's a second, you made a motion to?
- Yep.
- I'll second that.
- Is there a second?
- All right, second by Essie. All those in favor.
- [Group] Aye.
- All those opposed. All right, so that will go on to committee. Great, and then onto our next item, Julia.
- OK, so she said--
- Here's the cord, so all you gotta do is bring your laptop down here.
- I don't have a laptop.
- Oh.
- Is that OK?
- Yeah.
- You sure?
- Yeah.
- Is this what you need?
- I have that actually, I just updated that.
- You can use mine for a nickel.
- Try four cents.
- That's cute. It's not saying much about the whole...
- And see which kind that has. Is it F, I don't know. I think I've just these two. See if there's anything else. Sorry.
- I guess I'll take that nickel. Don't forget, I owe you a nickel.
- So there's an HDMI cord.

- HDMI, is there an HDMI port?
- Oh, looking and see.
- Right there.
- There should be.
- This spot says HDMI in.
- Wow, you've done this before.
- There you go.
- There you go.
- Cool, all right. Let's see, the power up here. All right, so. Can you guys... These are more just like, yeah, there you go, props. Unless you really, really want them. But we can also download them online.
- That's what I want.
- [Julia] But you should look at it now.
- Right, and then I'll give it to Celestine?
- [Julia] It's really like a more technical kind of... Yeah, can you think of where this, we sent you a link of the document too.
- Yep.
- Oh.
- [Julia] She has it already.
- I didn't realize that.
- It should be used in the link in the PDF.
- OK. all right, so I work, I'm with the University of Wisconsin Sea Grant, and I geared this presentation for them,
- [Steve] That's fine.
- Since a lot of terms you use they might have been like, huh, OK. But I'm glad you're here to see what this is about, and why the grant got on the eyes and idea. It moved quicker than I anticipated, and I haven't thought about it, but I do, I work for the University of Wisconsin Sea Grant. I think I met you once, maybe, at a Fox-Wolf Watershed Alliance Conference a few years ago.
- [Matt] Probably.
- I work with communities on the Great Lakes, and a lot in... I might have to far, well... Sorry, I'm not very good at talking...

- Hi Stephanie.

- Hi.

- So I've worked with a lot of different communities in Wisconsin in general on this particular project. I am not an engineer, I'm not a planner, but I helped develop that workbook which you're based off of, and which this presentation's gonna be a little bit about. I wanted to give a little bit of background to everyone, just to understand what. Seth's watched actually a full. This is a very short version of this presentation too. Seth watched the whole webinar, and he liked what he saw, and he thought maybe, and it was part of the Green Tier Legacy community's webinar series, and all of a sudden I got on the agenda. So we're here. So the Sustainability Commission went very quickly from renewable energies to water resource managements very quickly. OK, in general. So, yeah, I'm an outreach specialist, OK, so I work with communities, I provide assistance and grant writing and education and stuff around this project and many other projects. OK, the first thing, I just wanted to kind of clarify what we're talking about in general is stormwater. Traditional gray stormwater, Which Matt manages for the whole community, basically, it's all the water when the snow melts or it rains. We're basically conveying it away from our buildings and our houses into parking lots and storm drains, and then those go to, our gutters and our stormdrains, they eventually end up, in our community, in either the nearest water body, like the lake or the river, the Fox River, or maybe a creek going off of that. The big problem, really, with stormwater, and most of what I'm telling you, this is nationwide problems, nationwide problems in general, is what's actually going into our stormdrains that's coming off all these hard impervious surfaces. This is, hopefully it worked.

- Oh, that is cool.

- It worked when I did it. There we go. This is the storm drain of a storm, I think on the west coast, storm out fall going into it I think. So, we have, if you think about like oil, we have lots of oils on the roads, we have salts really becoming a big issue in general, which is a very tricky one, because of the hazards, you know, we want our roads dry, or people not falling and slipping an everything, but there's bacteria, there's fertilizers, there's pesticides, there's all sorts of stuff. There's heavy metals, a lot of heavy metals going into storm water, and so it's really just not clean water, and it's all ending up, basically, in our local water body, and we live on the river and directly on the Great Lakes too, so that's like traditional. So across the country, we have this really old, aging infrastructure, and it's not meant to handle, like some of the stuff that you can see is over a hundred years old. Superior Wisconsin has storm pipes that are made of bricks still, I don't know if that exists, that exists here too. So imagine your storm going in pipes made of bricks, and then once one brick deteriorates, it's apparently like a zip line.

- [Matt] Actually, our brick sewers are one of our better sewer systems.

- They're the best, better, OK. Hmm, I don't know about this.

- [Matt] As far as structural integrity.

- That's good.

- [Steve] It's amazing. I wish we had an opportunity where we could do public tours of things like this, because the craftsmanship that went into those brick sewers and brick manholes, it's absolutely phenomenal. That stuff will still be standing long after I'm dead.

- Well, I know somebody who does public tours, but just kidding.

- Well, would that be the way to go then?

- [Steve] Nope.

- No.

- OK.

- We have the traditional, and that's just a big pice of the pie, but there are other things, then you start talking about green storm water infrastructure, and see these are just different ways to manage storm water, and they're really about trying to restore hydrological processes, so really getting the water to infiltrate in the ground when it lands or the snow melts, or store it so it can evaporate. And so, it's preventing that water from like rushing into our stormwater drains, or in the creeks and rivers and stuff, and taking with it the pollutants. They also filter our a lot of the pollutants at a time too. This is an example, this is down in Milwaukee. This was a huge brownfield site, so very contaminated, the industrial. It was like the machine engine of the world, where they manufactured trains for the nation, and it was a brownfield for many years. Now they turned it, and they did a contest, and they had architectural designs, but this is an eco-industrial park now, so there's like ten different industries, very large businesses, Palermo's Pizza's down there, and all of the stormwater from that park is actually filtered into these reconstructed wetlands areas,. And so, it slows the water down, and then on the other side of that trees is the Milwaukee River. So it slows the water down, filters out stuff, and then eventually, and they've also connected it with the Hank Aaron trail, so it's become a really big public asset also. And so, this is just a large-scale example of managing stormwater a little differently than just trying to get it off your site and down into the gutters and the pipes as fast as possible. Some of the examples that we were talking about earlier, these are like infiltration bioswales. So these are like when areas that what you can see is the planted version at the top, and then you can kind of see how it might be constructed at the bottom, and you can see how the engineering is done. These are engineered systems, so the engineering's done to like meander the water, so it slows it down, another thing, so you're not having, like he was talking about how their underground systems have different ways of slowing it down, so it's not all rushing in. So it's a way to slow it down and then try to infiltrate it in the ground a little bit better, before it makes it to the storm drain or wherever it's going. So those are swales. And then we talked about permeable pavements and pavers. This technology's like very new and an emerging field, so you have a traditional asphalt, that the water's not really getting into the ground, and then you have this permeable asphalt that it is. This is an example of an alleyways, so these are pavers. There's all sorts of different types of products out there. This is an alleyway that has these pavers, and then this one, does anyone recognize where this one is?

- Hana Bay, didn't we see that one?

- No.

- No, what place is it?

- Is that Golden Oaks?

- It's what? No, that is saying Ashwaubenon. It's at the Brown County Ashwaubenon Library. This is a product called PaveDrain. Oh, I should have brought my little model of it. But, rather than, and these permeable pavements can be very expensive, and they have operating and maintenance costs, which we're not gonna cover that topic today, OK? That's a barrier that I don't talk about right now. But PaveDrain is a Wisconsin made and designed product company, and it has an arch underneath, and actually they have a material under there that takes out phosphorus too, but instead of doing the whole parking lot, they got a grant, and then they strategically put it just in an area to collect, and then they graded their parking lot so that it was a more strategic place to put it. There's pictures in here of using PaveDrain in parking lanes on a street too. So rather than doing the whole thing, you put 'em in more like strategic locations.

- So if it takes off the phosphorus, where does it take the phosphorus to?

- I don't know.

- It actually.
- [Steve] Binds it.
- Binds it to the existing soils and then through the maintenance practices, that Julia doesn't wanna talk about, which is either, for some of the initial, is vacuuming out the debris, and then, after a period of time, you literally have to remove all the pavers, replace the media, put new media back, and then put the brick back in, so it is--
- [Steve] If you think about a water filter, essentially that's what you're talking about. At some point in the future, you're going to have to change the filter.
- Filter, right, so when they collect the phosphorus then, you vacuum it out an everything, is there, is it just...
- Landfill it.
- Landfill it?
- And then there's many, many, many different products too, and different types of maintenance.
- [Steve] Yep.
- Products from phosphorus?
- Uh, no. Products of permeable materials, and it's a very, like, quickly evolving technology, and I've seen failed stuff too, like there's permeable concrete. I've seen failed permeable concrete.
- Failed?
- Failed, like failed.
- F, A-- Failed, did not work.
- [Matt] Did not work. Basically, they clog and then--
- It depends, it depends on the product, and this is a big, and that's why design standards and things are very important in general. At Saint Marys, they had permeable pavers there, but we didn't point them out, 'cause the facility didn't want us to, but they were failing, so. The other practice they have were not, but he did not wanna focus on that, he didn't even. I just noted it anyway, so. PaveDrain has had quite a bit of success, and is now in that nationwide company. Do you have any experience with then at all? They're pretty, yeah, in general.
- Do you have costs?
- I don't here. You're going into...
- OK, back back.
- Other barriers that I'm not talking about today. There's many barriers to green infrastructure.
- Right, OK.
- And it's gonna be important to figure out how to get costs down for a lot of this stuff.

- OK.

- In general, for the whole industry. like solar, we're not gonna use solar, unless we can bring the cost down, to make it affordable for more places.

- It's impractical.

- OK, rain gardens. People are probably kind of familiar with rain gardens. They kind of fall into this bioretention, basically, and so rain gardens are kind of what they sound like, they're a depression in the ground. Depending how big they are, they should be engineered for how much water they're collecting, so this one would be an engineered type system, because it's probably collecting water from the roads. You put one in at your house, you probably just can dig a hole and then plant the right plants.

- I got one.

- You do, who else has one, in here? have one, it solved a flooding problem for me. It wasn't the water cooler that drove me. All right, another example of it on a street. This is in Milwaukee, so you can see it's actually working, or it's raining, so that's what I meant.

- [Steve] And coming to North Webster Avenue.

- Is it, cool.

- [Matt] Something similar to that.

- [Steve] Something similar to that.

- Is anything happening on University, when it gets redone?

- [Steve] University's a long ways off.

- Yeah.

- It is? OK, they did all that, OK, I don't wanna... Go ahead, please ask me.

- [Deborah] Could all those flood, I mean, that area can flood and those plants, most of them will survive.

- Yes, these are water tolerant, and if the implementation is done correctly, you should be thinking about salt tolerance species also, and you should also be thinking about O and M, for sure.

- What?

- Operations and maintenance, because whoever owns this is going to have to maintain it, and something that's not maintained properly is going to fail, so we don't want that to happen. Milwaukee's gone through a lot of work figuring out O and M and how to do that properly.

- [Matt] On North Webster, ours won't be that diverse of plant species. We're just gonna go with what's known as a no-mow grass. It'll get up about nine inches.

- Yeah, yeah, I'd love to do my yard with that.

- [Matt] But it's gonna be an inverted swale, where the pavement is gonna drain off and then--

- Is that gonna be the boulevard?

- Is it gonna look something like this?

- [Matt] It'll be more similar to that.

- [Steve] Visually, it'll look more like this, and with the last photo that you had, there was a beehive inlet grate in the middle of it. These are intended to take that first low volume rain storm and provide the treatment, but we have to be aware that high-intensity, high-duration storms are also prevalent, that will quickly overwhelm a treatment system like this, so you provide a redundant system, that's a conventional storm sewer inlet, to take those higher volume storms, which we will have a complete back-up system on North Webster. It's also useful because, you know, we get winter here, and when the plant species are dormant and the ground is frozen, you can't get that infiltration, so you still have to have a place for water to go during cold weather times and during spring run-off.

- So, this one, you can see that it's in, I think there's like a gas station on the left side, and I don't know, that obviously looks like a Fleet Farm type of thing over there. This is, so it's in between two parking lots, and this is up in Superior, so very, very cold. We went and toured this after, in June, they had like this six inch rain event that washed our Highway Two up there, which is the highway between Ashland and Superior, and this was the next day, so these are systems that are meant to drain. You know, there're not going to be standing pools of water. If it's standing pool of water, it's not designed properly, basically. so it was a perfect time to go visit these systems actually. This is built on, this was whatever the developer, they were able to put it in, they used local compost even, just like a lower maintenance type situation, so you really wanna consider who owns it, and how is it gonna be maintained. Rainwater harvesting's another example. Most people understand rain barrels. I just wanna show you some bigger examples of this. This is that Menomonee Valley, I didn't say the name of it earlier, but that big eco development, so this is a giant cistern collecting the water off the highway that's going above it, and then they use that to water plants. I just wanna throw that out there, that is a type of green infrastructure, in general. These are planter boxes, so these would be more appropriate in urban settings where there isn't a lot of space, in general, to do all these big projects, or people wanna do on the side of their building. You can see they've got the storm drain, and it's just put into this, and there's lots of, yeah, other things. Deep rooted plants can be considered. They mentioned they're doing a lot of natives, the Village of Allouez does, in their stormwater ponds, plants like all native deep rooted plants, 'cause they like the aesthetics of it. This would be like a residential kind of thing too, I think. Ned, you said Ned has, like his whole yard is deep rooted plants. Oneida is doing some replacing turf grass with deep rooted plants, in general, in bigger areas. That has a couple benefits, it infiltrates the water, and then it's also that's a cost savings area, because there's less maintenance, in terms of mowing, pesticide and herbicide application.

- [Matt] Once it's established.

- Yes.

- [Matt] Which is usually a five year time period, and then, even once it's established, you still have to do maintenance of periodic burns or cuttings.

- Or mowing, yeah.

- [Matt] So there's still a maintenance aspect and a lot of our early stormwater ponds have native bird landings associated with it, and we're not adverse to 'em, but just in some cases, due to the proximity of some of the residential developments, they don't want the deep native species. Our first couple ponds that we put in, our consultant put in, 50 different varieties of plants! Well, only five survived, so we've cut our planting selection back to about 12 different species, and that seems to work quite well.

- [Steve] But some of the other things that we have found with using the natives, using natives and putting some degree of biodiversity in, again, it's not simply about the stormwater management, in order for it to be truly sustainable. What it does is provides the plant species that will provide the habitat for the animal species. So, one of the reasons that Ned is so invested in this, a lot of the wildflowers here provide habitat and food for native bee populations, so it's very good for pollinators, it brings back chipmunks, squirrels, small mammals,

- Butterflies.

- [Steve] Which raptors then feed on, and it's taking a more wholistic approach and looking long-term at sustainability, so there's a lot of different reasons, beyond the short-term benefits of stormwater management, that we wanna continue to look at these things.

- Do we have a list of the 12 species we use?

- [Steve] We have old plans on them.

- [Matt] Well in old plans and--

- [Steve] Just to compare a project that we did in 2006, versus a project we completed in 2018, it'd be real easy to take a look and, OK, yeah, this.

- OK.

- [Steve] Some of what we've found is some of those species were good for two years and they would help pin the soil in place while some of the deep rooted species started, and what we've done is we traded, instead of planting from seed we used live plugs to give those other species a head start, so we've made some modifications to the program, but doing it with the thought process of what's going to survive and where's the best use of the money.

- Yeah, people really don't know what you're doing. I'm very excited to hear this, but that other converse, like I said, looking forward to learning more.

- [Matt] Well, like Steve said, I mean, we don't toot our own horn, we just go ahead and do our business.

- Well yeah, what you're doing that's good.

- [Steve] The other part for us, and I mention this a lot to the media, when I'm speaking with them, I find fascinating what they find interesting, because to me it's not interesting at all, that's just what I do. This is my job, so, you know, you should enjoy your job, but I don't get all excited, oh, I'm planting prairie grass. It's just one of those things that I do, and we've been doing it for so long that for us it's normal. It's not special. We're not out saving the world, OK, we're just going to work today. That's what we do, so to us it doesn't seem like it's that big a deal.

- OK. Green roofs, so these have some benefits in energy efficiency. This one's at Saint Mary's Hospital.

- It is, wow.

- And it's a beautiful green roof, because they put it in really as a negotiating for more parking, or something like that, but they also use it as a place for their patients, and an understanding green, and nature really helps with health and healing also, and just part of their environmental ethic, but I mean, it can hold a lot of people up there. So De Pere, I think, has like City Hall has, their's has a green roof now, but I don't know, it's not like something you would go up and take a look at it, 'cause it's not probably... But anyway, there's energy efficiencies, and this is a way to capture the stuff right on the roof. Here is stormwater trees, so these are

specific trees that are meant to capture stormwater. They mentioned one that sounds like it was a failed experience, which is unfortunate, and this is another kind of technology that there's lots of different products out there, so this is just one. This one is like these, I think it's called Cita Cell, but these cells actually go underneath the pavement so then the roots can grow, because a lot of urban trees get put in a little box and then, I mean, if they're not gonna, their lifespan is pretty short if it's on a street tree, because their roots can't grow, basically.

- [Steve] It wasn't a failure, it taught us where not to put one.

- I like that. I like that it's not gonna deter you from doing another one.

- [Steve] We still believe in the concept, we just found that it wasn't applicable at the back of a curb. It needs to be in a public plaza.

- Yeah, yeah. Here's just another kind of example of, in Milwaukee again, I'm using trees. This is also bio retention, but this is really, definitely, there's trees and bio retention, so it all takes, yes. Lots of lessons learned over the last few years, and more to come I'm sure.

- There we go. Maintaining and growing our urban tree canopy, just in general. This is Green Bay, I got it off the website for the Urban Forester. We definitely, mature trees capture a ton of stormwater, and they provide a host of other benefits, including increasing property values, energy efficiency for houses, reducing urban island heat effect. We have a really big problem here and everywhere with the emerald ash borer, so we should be thinking about how we're gonna replace these trees, and there's lots of grant money out to do that. There's also a lot, I feel like, I live on the east side where it's really developing, and it's like farm fields converted into neighborhoods, and so there just a lack of trees. I don't know, but it's kind of just turf grass everywhere. I think the Packers have a tree planting program. I think that'd be pretty cool to see what they're doin', and see how we might be able to do that. Then also, just to think about turning those wet ponds. And looking at places that... So this is an example outside of Ann Arbor, so this was to meet a TMDL pollution limit, and directly a stream downstream, and they had storage like wet ponds, and then they had to reconstruct them, and I think there's several of them, but they also turn into preserve, and this is a big community asset, so I'm standing taking this picture on a trail that goes around too, so thinking about how we can make these things into community assets also, at the same time as meeting the goals of water quality and quantity issues. So those are my examples of green infrastructure, what I'm talking about. So, why do code and ordinances matter for green infrastructure? Well, a lot of reasons. As many of you know codes and ordinances really dictate a lot of stuff in the community, whether it's road widths, public services, how private property is dealt with, how public property is managed, even how governance is run within a community, right? So, across the nation, code and ordinances were developed before we actually knew the impacts of stormwater on our water resources, in general, so we have very outdated codes and ordinances over all across the country, and in general.

- [Deborah] May I say something? John Nolan designed that. Do people know this?

- I did not know that.

- [Deborah] OK, so John Nolan drive in Madison, you know, that's how I know it, but they, Green Bay hired him from out East somewhere, and he came out and he did this, and he put parks everywhere. I've got a photo, it's a little bit outdated, at home of this, but isn't that just a little trivia. Interesting, yeah.

- I'm glad to know that. Yeah, so outdated can have an impact and can be barriers to green infrastructure and new technology. I mean, we have outdated ones. There's examples where there's different parking ratios for men's and women's department stores in communities, or where to tie up your horse downtown properly. There is one community, this is not a good one, of like the feeble minded, like parking for the, yeah. Parking ratios, etc. These are things we really need to maybe take a look at and say what in this, you know, 21st

century should we be looking at. OK, so codes and ordinances also, we have outdated ones. We also have, in communities across Wisconsin, sometimes you have charismatic leaders who are doing amazing things that you don't even know about, but what happens if they get hit by the beer truck, or go Mexico.

- A big muskrat?

- A big somehow, yeah, a muskrat. I dunno, get blocked by a muskrat somehow. I've seen this a lot with mayors. There's a lot of mayors in Wisconsin that are really gung ho with sustainability green stuff, or even in how municipal codes and ordinances get implemented sometimes isn't so much what's written down, but how it's implemented, in general. So how do we codify the things people are really passionate about for the future year. They mayor might not get re-elected, or he's not even running next time, so, you know, then all those practices and things you wanna move forward, if they're not codified, then they might disappear. OK, and also, another example is when no one is deciding in the development process, so what is missing here?

- You already told me the answer.

- Yeah, you're not allowed. I'm surprised most of us...

- When no one is deciding.

- Yeah.

- You just get wild.

- So what is missing in this picture?

- Curb stops?

- Maintenance?

- Yeah, curb stops. You put in this nice bio retention area, and then someone runs over it, just rolls right into it, and then you have a couple different problems.

- Well now, who would do that? Well, there's communities that say hey, we let the applicant decide what to do. So that leads to really bad design processes potentially, and then, leads to failed experiences and bad experiences with green infrastructure and plenty of other things.

- So we don't have a code.

- Or design standards or technical standards I guess is one of the... Or things to help direct people. OK, so you can say OK, so what? So we comply with the state stormwater standards, we meet our MS4 permit, which they talked about, which we don't ever meet here, so.

- [Matt] I don't anticipate us ever meeting our MS4 requirement, but, F Wong is out of here.

- So, this tree, this sad, sad, sad tree, was permitted in full compliance with the MS4 stormwater. So, someone spent money and resources on this tree to put it in and it's not there anymore. So, yeah. So how can we think a little differently? So, this is really not, we're not trying to do more about more regulation or cost for sure. We're just though, this hedging is another common thing communities use for screening. So we know the water doesn't run uphill, you know? So it's really just starting to think a little bit differently, and think about how we can actually combine features that were requiring on the landscape, like landscaping and parking lots to actually make them not just features and thinking how we can be smarter about managing the water and combine with some stuff. Together, OK? So, why are codes and ordinances important for your new structure?

Well, if the code language is not clear that it's actually a green infrastructure in an acceptable or preferred approach, it's not going to likely be considered in development proposals, design plans, or capital projects in general. Don't forget. Maybe you're already do that, you don't know. So then, we, during part of this project also, this project came out of Milwaukee Metropolitan Sewerage District. So, and the thousand friends of Wisconsin whose the green tier. They did a project with all 28 municipalities of this Milwaukee Metropolitan Sewerage District to audit their codes and ordinances for green infrastructure to see where there are barriers. They also understood that codes and ordinances are pretty ambiguous and maybe people don't really, I mean, they don't know, it sounds like OK, does this actually matter for water quality in general? So what they did is they also developed examples. If you, so they gave an example of a code revision. So this code revision is to allow permeable surfacing in driveways and alleyways. And so, the code in this communities that this, they recommended this amendment. Pretty boring to non planners in here, OK? They use the wind slam model to model if a parcel would be redeveloped or developed under that new code change, what would the impact on water quality and quantity be? And so this is a permeable alleyway. I think it's 5000 square feet but it catches 25,000 square feet of water. And so, just from like a code change, they modeled that doing that, you could actually have a pretty significant amount of runoff reductions and volumes. Another example, there's several examples in the book. They wanted to show that code changes do matter really, in terms. So, this one is the encouraging the use of natives instead of lawn areas and replacing turf grass, basically. So turf grass is really shallow rooted, pesticides, herbicides. So just adding language to encourage the use of natives in properties. So then, they took this commercial site. 1.74 acres I believe. And just by replacing the turfgrass, not including any other stormwater the measures, they could reduce the runoff volume by a significant amount. So, brought the volume by 74 percent and then the TSS by total suspended solids which is sediment by 64 percent. So, they're showing the impacts of code changes through Wisconsin stormwater modeling, and trying to help communities understand that maybe this could make a difference for their permit, too. OK, so from that project in Milwaukee, we took their methodology and we created this workbook, so it's an audit. And so, we do think this is geared for communities, it's a pretty technical workbook in general. It's geared for planners, communities, it's a tool and it's really meant to bring planning and public works together because that's where green infrastructure really intersect in general. What makes the audit process unique compared to just like another checklist, first of all it wants to, they understood there's no judgment approach when it comes to to development stormwater and working with communities, so it's up to the community to see where green infrastructure can fit into their community and how they want to approach it. No judgment in terms of whether you wanted, you know, your bicycle parking next to the Starbucks or whether you wanted like three-car garage, those kind of things, you know? Whatever the community really needs and wants and desires. Also, it's not like, just a model ordinance, so there's not just, codes and ordinances are really complex and they vary greatly across communities. So, there's not gonna be a one-size-fits-all model ordinance for green infrastructure that fits every community. So, it's digging into talking to the Public Works Department and planning and figuring out what's going on in terms of implementation. They also looked at community assets or things about the community. Taking the community approach, what does the community care about? So, does it have natural assets it wants to protect? Or that they celebrate as part of their community's identity? Hazards, so what hazards are they dealing with? How can green infrastructure kind of help solve the hazards within a community themselves?

- [Steve] Actually that's the result of green infrastructure right there.

- [Matt] That white car?

- [Steve] Is in a pond.

- [Matt] Is in a bio filter.

- Oh, no.

- [Steve] It drove off the parking lot, into the pond, into the bio filter because the water was deep enough in the parking lot, she couldn't see the curve.

- Oh, no.

- And I would say, and I'll just preface, green infrastructure is definitely not, there's no silver bullet to these big pumps and like they've said, we are going to be seeing more intense storm events coming. And so, there's no way green infrastructure or current stormwater system is gonna for a giant, kind of flood in general like that, that green infrastructure though is a tool in the toolbox to help, and especially to get those pollutants out and then, also help, and green infrastructure can be a tool to help protect our gray infrastructure assets too, because it can--

- What infrastructure?

- Gray, gray, like the storm pipes and the tunnels.

- That's a gray, that's considered a gray?

- Traditional gray, remember when I showed that, you probably focused on my arrows.

- Oh yeah, yeah. I didn't know that was called gray.

- Gray, gray infrastructure, yes.

- Yeah, I've never used that, I don't know that term.

- Storm sewers and gutters and drains, right? Anything else?

- [Steve] Conventional hard infrastructure.

- Yeah.

- It's called gray.

- [Steve] Gray is the color of concrete, so. Gray infrastructure.

- I was wonder how--

- Thank you. I'll remember that. So, all of these things are yeah, we have outdated infrastructure in general and so, all of these things are tools to try to help us in general. And green infrastructure, like they mention, comes without their benefits too. And in certain senses can try to help, that is really unfortunate and interesting to know. I'm actually glad and not glad, because I know that was really a big issue, but I'm gonna use that as an example from now on. Like, ways green infrastructure can be a hazard. Who knew?

- It was one of those intense rain events where we got five plus inches of rain in an hour hour and a half.

- [Steve] That was the August event that that happened and then at the September 17th event, we had to replay. Somebody drove into the same bio filter again.

- Wow, that's a popular bio filter.

- Well, the whole parking lot must be just like bowl, then.

- [Steve] Well, as you come off a Main Street, it makes a 90-degree bend and with the volume of water that was in the parking lot, somebody didn't see the curving, and just drove straight.

- Where on Main is that?
- Near the Pick and Save.
- So Familia Dental, Arby's,
- [Steve] Pledge, that's actually right in front of the Dollar General.
- [Matt] The Dollar General, yeah, on the opposite side.
- [Steve] The Dollar Store by Martin Hardware.
- Which was the old Pizza Hut, which, was about three feet below the Main Street elevation. So they actually built up the store, but left the biofilter and the edges around the parking lot low. So yeah, they just drove off.
- I'm gonna have to go check that out. Not when it's raining, apparently.
- [Matt] Actually, this morning, on my way in, I was gonna stop and take a picture because I had saw your presentation or the preface of it. I'm like, there's the after here's the beforehand. Didn't get out there.
- Oh boy.
- Just have to build cars with water wings.
- Oh boy.
- Glenn Johnson had one.
- There you go.
- So, part of the audit is also looking at what the communities, identity and character is. Are there things already happening within the community? I know we have wild ones here, you know, that would be advocates, potentially. Wild Ones as the, you know, that they would like the pollinator species kind of things. But thinking about where who are advocates for green infrastructure when you're thinking about it, who in the community you can work with to get these things going.
- Community gardens good for--
- Yes, yes, they're great. They're a great place to like pilot little things. Like, if you imagine on a community garden, I'm actually told this recently. If you put in a little shelter and just put, that has a in a picnic table or something, and then, put a little rain barrel on there, so the shelter would catch the water in the rain barrel, it would be a great place for people who take a break and then also, just an educational type thing. There are more integrated ones in, I think I've seen in Detroit, where they're actually funneling water maybe from a nearby church to the community garden for using for irrigation.
- But you have to be worried about those heavy metals and stuff, if you're coming from that place?
- [Matt] If it's coming off of the rooftop, it's actually clean water. But once it hits the ground is where you start picking up a lot of your pollutants.
- [Steve] A lot of your heavy metals actually are a result of the combination of vehicle exhaust, which contaminates grit on the roadway, or believe it or not, your paint. You paint with marking paint, the yellow is

cadmium, and the weight often times is zinc. So, you're getting heavy metal contamination as snow plow tires or whatever--

- Is there anyway we could look at maybe changing those kind of materials?

- [Steve] What else are you gonna use for a dyke?

- I don't know. Something gotta happen.

- [Steve] Well, some of these metals are used for pigment and have been literally for thousands of years.

- OK.

- Don't play in storm water, don't play in storm water. I think that's the lesson.

- So that's my problem.

- It's tempting.

- [Steve] We had those issues before.

- It's tempting, but--

- [Steve] When we built the pond over at Wilder school, that turned into a popular swimming pool for a while.

- OK. OK, so also things about you know, development. So how does green infrastructure fit into current development pressures? Is it already a built out city? And you have issues, so you might want to think about different types of structures that fit that, like planter boxes, shared parking, things like that. Is there still room to grow? Those would be, the audit would look at places for subdivisions and related to cul-de-sac widths and driveway aprons and those kind of things. So, it's green infrastructure in this audit but it's also about reducing just impervious services in general and updating standards, and trying to reduce the hard surfaces that are contributing to all the stormwater, too. It also is, the last part is just, it's really down in the weeds. So it's not just a normal checklist. So we have, in the audit it has 15 different categories of questions that you really go through and basically, that cover permeable materials, parking landscaping, community outreach and education, zoning. And so, these are really a mix though, it's not just Public Works. This is definitely going into the planning room and then even, yeah. Anybody who touches codes and ordinances in general in the city. Could be code enforcement, building inspection. So then, there's a nuance code ranking. So knowing that a question isn't gonna be a yes or no answer. Save permeable materials as permeable materials allowed. It could be more complicated than just yes or no. Maybe it's allowed in one part of the code but then, you're required to sealcoat something in another part of the code.

- You would never want permeable all the time? There's a problem with permeable?

- Well, the cost I think is--

- Oh right, right, I see. So you need your code and, I get it.

- Part of the code, the question was do you allow permeable surfacing in your alleyways. Maybe it's allowed in some part of the code but another part of code, everything has to be seal coated. Kind of defeats the purpose of having something permeable.

- Right.

- So, the audit takes into account the answers to the questions, it's not just yes or no, codes and ordinances are way more complex than that, so it's trying to tease out nuances within the codes and ordinances like that. If it's not mentioned, the practices isn't mentioned at all, like in definitions or anywhere, then that can actually be a barrier too. And maybe it's up the discretion of the municipal staff or the council or the Planning Commission to approve it. And without it in the codes and ordinances, what if they have to go off of at all? So, this is an example from the landscaping. So, is the use of deep-rooted plants and native plants encouraged in the landscaping standards? So, there's landscaping standards, you require to do landscaping and then, you would go through and answer that question of the codes and ordinances and give it a grade, basically. You have all those categories and then you have basically, within those categories, at the end, you have kind of a report card that basically kind of tells you within what categories are doing well or maybe there's room for improvement, or there are really hard barriers for certain types of practices. So, you have that information. That whole audit process is pretty technical and in-depth and definitely takes planning expertise to do. But then, it really goes back to the goals and the community goals and how green infrastructure fits in there. So there's likely a lot of potential changes, but you would focus your code amendments and ordinance changes on what the community wants and how green infrastructure would help them. How would it help them implement what they want to do more, or something like that. Yeah, so for, let's see, for example, in Superior, I'm working with Superior. And they have an issue with trying to figure out, how do we go talk to somebody, is it a news, like, is it just an overgrown lawn that someone didn't want to mow, or is it a native one? So, an outcome of the audit was actually creating a natural, native lawn ordinance that describes exactly what that actually looks like. So, the person going out to talk to them that can say, this is what it's supposed to be. So that's just helping craft something that wasn't there to begin with, which, before she had nothing to go off of. So she can't go up to Joe Schmo and say hey, mow your grass. Basically so, Madison, they have a very big program at Madison about terracing and, we don't have that many terraces here though, right? But it can be an issue if you have neighbors complaining or something like that, so there's different ways to handle that. Technical standards, just for these new, emerging products and technologies that Wisconsin DNR actually has a lot of technical standards for this kind of stuff, like bio retention. So, pointing to those for good design practices so we don't lead to people's cars ending up in, I don't know how you present--

- [Matt] Required within our storm ordinance that they must follow DNR technical standards.

- Great. So, that's what I have, this was see very short version of the audit. I know that's not probably as much as you would probably want to know about, but for this purpose I think it was. And it's a very, I've been working with several communities. So obviously all the municipalities in Milwaukee, Port Washington was the first community that piloted this. I'm working with the City of Superior, Bay Lake Regional Planning Commission, it's a great resource here and not part of them, but they've done this for the city of Sheboygan now and they're gonna try to do one with Manitowoc County. And then there's several other communities in the Great Lakes in Michigan who have gone through audits, so.

- Did you have a question? I thought you're trying to get our attention. Oh no, OK, all right. Nevermind.

- Are there question for for Julia? all right, thank you for presenting.

- So you work with Superior?

- Yes.

- I hate those people.

- Oi!

- There think they're so superior.

- They're not creepy like those folks in--

- Don't worry, they have a major complex. They have just a big complex because they've Duluth that's like all pristine and blah, blah, blah, blah. They have their own issues. They're not thinking about Green Bay, that's for sure. And they have their team in there, watching as much sediment come down the St. Louis River as we are watching in the Fox.

- [Matt] That one picture that Julia put up of the lower bay of Green Bay with the big seven plume,

- Yeah, yeah, yeah, yeah.

- That was after, I believe, a March rain event.

- That was pretty wicked.

- [Matt] And a lot of that runoff comes down the East River watershed and is primarily a result of agricultural practices. However, that's a whole separate topic.

- That's a whole other talk. I was just using this to illustrate the point of this as an issue just in general but yeah, normally what's on this slide is, so they've done modeling in our lower watershed area, our basin, the Lower Fox Watershed. So this, rate this was 2012 and 80% of the sediment that comes in The Bay, first of all it's like 24 dump trucks a day, on average, over the course of a year, like average, that's a lot of sediment. It's America's finest topsoil landing up in The Bay, with lots of nutrients attached to it. But, 80% of that sediments that comes into our Bay comes in an average of 14 days of the year. So not all at once, but think about this, what is that? Those are large storm events and spring runoff events. So, we really need to try to keep the water, we need to get the water and keep the soil on the ground on the farmers fields and the water into the ground too. So, there's definitely big issues upstream for here. But that doesn't relieve us of our, we're all in this together.

- And just to expound on that, I mean, again, I mentioned that it was agricultural, a large part of that during early spring runoff. The wastewater treatment plant, New Water, is partnering with the Oneidas and other agencies to do some agricultural practices to basically put in green infrastructure waterways, or small tributaries, leading to Duck Creek to try and prevent this from happening. So, that again is a form of green infrastructure. They are looking at taking it out of the pilot program process and expanding that to other agricultural tributaries into the East River, into the Ashwaubenon, Ashwaubomay River watershed, etc. So, it doesn't necessarily have to be in the greater Green Bay Area but I know Barrett's Creek is another big sediment discharger because we do have lot of agricultural practices in the town of Humboldt that discharged into Barrett's Creek, which then run through Green Bay to get to the East River in and out.

- Is there any map that shows the source for all these things? What's the source of the East River? What's the source of Barrett's Creek? What's the source of this stuff? Is there anything that, do we know, we must know?

- Within the TMDL document there are basically diagrams of basically the watersheds and you can kind of pinpoint where the headwaters are, so to speak.

- Would that be online?

- Yeah.

- Yeah. On the DNR website, under TMDL.

- TMDL, TMDL.

- [Matt] Yep, you can then bring up the Lower Fox River TMDL and it's about a 250 page document.
- Oh! You're gonna real make me work, aren't ya?
- [Matt] There's various maps in early part of the document that show the various watersheds.
- With the east, for instance, if you go down into--
- Yeah, but there's been a lot of modeling done since--
- Salt of '96. And go up against the Niagara Escarpment on down the town of Holland between Holland and, trying to remember what's in the east of Holland. Right on the escarpment is where the East River starts.
- [Matt] Kevin.
- Well, I mean, this is the map of TMDL.
- [Matt] Whole entire TMDL.
- So, the red ones indicate that it's an impaired water body that basically pollutes, the sediment and phosphorus that's going in there is too much, OK, for life, biological life or something, basically. So, the TMDL's pollution budget tells you how much you need to reduce it by to meet the limits that the EPA standard set. So, I know that's a hard one, but there's, I think when you wanna, there's a better one. And it's not good because because it's obviously... I had a whole nother presentation about this if you want.
- Just send it in half.
- OK, about what.
- But it's gotta be more than a topographical map. There's like an overlay at the--
- [Matt] There's actually seven sub-watersheds of the TMDL that Green Bay drains in too.
- Seven, I don't think I knew that.
- Generally speaking, if it's flowing into the box, in Brown County and you're the east side of The Fox, adjacent to the escarpment, that's the highest spot. Everything from the back side of the escarpment going into Lake Michigan.
- Here we go, so this one, this is the, is this sediment, 'cause that one's P, so that's phosphorous. So this is showing, the darker one is the highest concentrations of where things are coming from. So, the Plum Ink Pot Creek, these are definitely all axed out. Apple Creek is a big one. Upper East, so the East Rivers are really high loading, half loading, so it's loading a lot the stuff in the river.
- [Deborah] So, that must be out by the University then, the escarpment?
- Yeah. And actually, if you take a look at the watershed map, if you were to go back and do an overlay, I'm gonna get real deep on you real quick. There is a technical paper from USGS called Place to see Geology of Northeast Wisconsin. I think it was published in 1946 by US Geological Survey. If look at the maximum protrusion of the Green Bay lobe in the last period of Wisconsin glaciation about 11,000 years ago, it's almost identical to what you're seeing right here. That's where the last remnants of the glacier was. So it hog down what now is the Fox River Valley, and as it retreated, it turned into a large lake. And this is where the sediment settled, so it's still kind of that dish. But it never got, the glacier, the last advance of the glacier wasn't

severe enough to get over the top of the escarpment, so it stopped at the escarpment. And this escarpment literally runs along this line, goes right up through Door County, and if you keep following it, you come on Buffalo, New York.

- Yeah, it's actually--

- Niagara Falls.

- Largest geological.

- Yeah, yeah, OK.

- Hovers over the Niagara Escarpment. It's the same feature. It run all the way through Canada. Goes across polls at Niagara.

- I think it's Buffalo.

- [Julia] I think, let's see. I guess there's only... Just...

- So, now,

- [Matt] That's not, the Upper Fox.

- That was a good one.

- [Julia] OK, go ahead.

- Right there. That's the escarpment. Now, it becomes less pronounced as it cross through the UP, it's not as radical, you don't see it. But basically what happened, an escarpment is a geologic fault where one block fell and the other one stayed. So it's a bedrock feature where part of it just dropped.

- That's kind of sad.

- [Deborah] Cool.

- Separated that that, that's sad.

- Oh, if we want to talk structural geology, we can talk in flames, in it's in flames and structure faults and block failures.

- Not my fault.

- I was looking for, I mean here, another issue really, I know, it's a water quality talk for another time. There's so much behind this. So...

- And Everything that you do,

- And we want to leave before, you know

- feeds into something else. But yeah, our water our watershed gigantic. It's like 6,500 square miles. Which goes into Lake Winnebago and then ends up here. So 1/3 of all the water of Lake Michigan comes to Green Bay, The Fox River in Green Bay.

- One-third of Lake Michigan? Wow, that I would not have known.
- The land.
- Wow.
- We have the biggest, it's huge, so the--
- [Matt] The Fox Wolf watershed is huge.
- This is a great nonprofit. I'll just show their logo I guess because you can see the water behind it. I don't know why they. It would be... There we go. I mean it's... Well, I'll just go back. But so, there is Green Bay right here, that's where we are. This is 6,500 square miles but all that land drains here, goes, and then, this is the upper, this is a Wolf River, this is the Upper Fox. So that all drains into Lake Winnebago and then Lake Winnebago drains into the Lower Fox.
- And plus, we have Lake Michigan.
- No.
- I thought you said one-third of Lake Michigan.
- [Matt] Well, all that water.
- We're on Lake Michigan.
- Well, yeah, well yeah.
- The volume of the water.
- But I thought we were flowing into it.
- We are.
- Right.
- Yeah, one-third of all the land of the lake. The basin of--
- I had it reversed in my head. And that's why I was thinking.
- So, if you take a look at the inflow, how much water flows into the lake annually, one-third of the water comes flowing in. Comes through this basin.
- It's a lot. And so, that's why our water calling problems--
- I had it reversed.
- Challenging.
- Something wasn't computing for me. Cool.
- The was a very informative discussion, presentation, thank you for that. Cool well, we can move on to regular business.

- Shut me down?
- I don't know what I did. I accidentally closed... I'll be back, keep going.
- If this table had green infrastructure, we wouldn't have to worry about that stuff.
- Permeable.
- All right, so the next part of the regular business year of the urban non-point source and stormwater management. So, that grant program, correct me if I'm wrong here, is a grant to help the city of Green Bay get a third party to come in and do that audit, to figure out what we're doing and what we're not doing.
- Yeah, to back up a little bit, have you ever applied for the grant?
- No.
- So, I heard--
- Well, I shouldn't say that, I believe that is the grant that the partner direct.
- It's a planning grant.
- You, I think think the planning--
- I thought that was, you mean for Bay Beach?
- For Bay Beach.
- I thought that was a PA at 319 grant. I don't think that would have paid for that parking lot. This is a DNR stormwater planning grant, so I think it's--
- For all our studies that we have done, we have never applied for a grant
- So I, a few years ago, heard this was an underutilized grant. So, this is the one, I helped a City of Superior to apply for it. And so, within the grant, it was for the audit, but also, they put in money to update their stormwater ordinance.
- Our ordinance is up to date as of two years ago.
- So you wouldn't need that. So, I guess the audit is very fundable if that's something like the city planning, whatever. It depends who in the community wants to do it, it's not always just the public works, so who wants to kind of do it. Because it could be the planning department that would want to do it. But I guess it's a stormwater grant, so that would be Public Works again. So it's just, I brought it up to him as an opportunity to basically be able to get funds to do the audit, because a lot of communities don't have the staff to do it. And I guess my point is that it, if that's of interest to you, then you could also ask for it, you could probably pair it with something that you might need done also. But in Superior, they use the funding to hire it, planning itself to do the audit for them, basically. And make the recommendations and show them. So, sit down and learn about all the things their community's doing and then actually, the audit's pretty technical. So, the City of Oshkosh feels like they have the staff capacity to do that kind of stuff. We've been working through it. And maybe like say, every community is so different, right. Port Washington away. So, we worked with them to help them do it. The city of Oshkosh. They have a UW sustainability class that went and helped them worked with the city to do it, but when we met with them originally, what was interesting about them is they said, oh, they just have

recodified, but they said they just update ordinances as needed, so it wasn't issue. But they felt with it between the planning Public Works, they had the capacity to work on things. So, it just depends. It's just like, if this is something that the city wants to move forward on, this is just one grant opportunity to it. There's other grant opportunities, too, so it's not just put it on your shoulders.

- I think what we would like to do tonight is just to put this in front of you and give you some time to look at it, and then, if it's something you'd like to look at before hand.

- [Steve] So, the intent would be to use this grant for the audit that you're talking about here? OK.

- The application deadlines are in April. And then it took them eight months. So, I really, you don't even find out. It wouldn't even start till 2020.

- Yep.

- if it was successful a successful grant. But the city does have to apply to this, it's not like I can apply for the city. I can help write the grant, provide a letter of support and stuff like that. I don't know your, like, I'm just learning about your program and stuff like that on how to operate. I was very, I got put on the agenda in the last week so I wasn't really anticipating this, but communities have reached out to me because they want to do it. So I'm there to help them figure out how to get it paid for because this seems to be a fundable type of thing. So I encourage you to think, digest all this and then, if there are things that maybe you could use something on, I don't know like, think about things that you could leverage into it.

- Yeah, so what we need to make a motion--

- Or a pilot project.

- If front of you guys to look at, or? Do you know, Randy?

- Motion to refer this to staff.

- Yeah.

- Right. I think a motion to refer this to staff. But before we make a motion, I'd like to make a motion to open the floor.

- Second, all those in favor?

- Aye.

- Opposed?

- Alix, do you have a question?

- Yes, Alix, transport supervisor. So, have you approached the county, has the county approached you to look at what the county has currently and what we can do for the county going forward, and just a scene we can make.

- Toward cooperatively on some of our manager projects?

- [Alix] Um, not for--

- Oh.

- [Alix] Someone from--

- So, I've been taking this, this is a fairly new project in the year and a half, so I just been on the road, giving presentations about it. So, I kind of count on, at this point, I just try to build relationships with different communities and then who wants to move forward on it, I've been helping them figure it out. So, I don't think, you're probably the first person from Brown County that's heard of this.

- [Alix] Yeah 'cause, one of the things that I wanted to do this time is to steer towards a more green future, and this is one of those steps in that process. So, I just wanted to know if--

- I'd be more than happy to come make a similar presentation at any of your--

- [Alix] Because I'm not going on the competing team, which is the planning development and transportation.

- Yeah, I can start there--

- [Alix] I would love to have you come in and talk to our group. And, see what kind of ordinances, we have, currently, and then, what we can do to update those ordinances to reflect what's going on. I'm so happy that the city is doing this, but I feel like County is kind of lacking in that aspect and this is why I'm here. And thank you for inviting me.

- You're very welcome.

- Yeah, I can give you my contact information and you can look online too, because you can download this digitally, and, I'll be happy to.

- Agreeing motion to close the floor.

- Motion to close the floor.

- Motion to close the floor, is there a second?

- Second.

- All those in favor?

- Aye

- Aye.

- Anybody opposed? All righty.

- Now motion to refer this to staff.

- So, there's a motion to refer the grant proposal to staff and then, at that point, they can figure out if that's they want to move forward on, and we'll start on if necessary, is there a second?

- I'll second it.

- All right, all those in favor?

- Aye.

- Anybody opposed? All right, great.
- And then, I'll just say that, we talked about a lot but I'd be more than happy to weigh in and just listen and see what your concerns or thought are.
- [Steve] And this is something we would talk with community and economic services as well.
- That would be good.
- [Steve] Because zoning is another huge part of it.
- Absolutely, 100 percent. When was the zoning code updated? When was the zoning?
- [Steve] That's continuously updated.
- Oh, that's good.
- We somehow ease on in.
- All right, well, with that, going on to the last item on regular business. I guess there's a lot here.
- Did we do the first one regular business?
- Yeah, it just occurred.
- Oh, right, right, right, OK.
- You made the motion.
- Yes, yes, yes, I'm with you.
- So, I mean, on this last part, we learned a ton from from the city about what y'all are doing in terms of stormwater management, a lot of great practices that aren't really visible to the public. I've definitely learned a lot, we had a great presentation about green infrastructure and our potentials there, and the potential grant opportunity to get that audit done. So with this, I guess, last section here, and I know it's getting a little bit late here, let's really take a little bit of time to figure out what our role in The Commission could be in terms of highlighting existing projects, or identifying potential pilot projects. So, if there's any thoughts and takeaways on directions and next steps, I think that that would be appropriate.
- I think we can cross out that one with the car in it.
- Yes. Let's not do that.
- So, you mean how to go forward together.
- Yeah.
- Is this for, it is specifically for stormwater or in the green infrastructure?
- Green infrastructure. Any info we've digested tonight, how we should proceed moving forward. And maybe that's just waiting to hear back, whether they want to pursue the grant and assisting there, or...

- I think that and also, I mean, we're here to, as I see it, help the departments. so they have ideas that they think they should be coming to us where we can help them, as for some direction, you know, it's not so much us going to them, unless we finally get some information or something, then we find out where they're at with it. If they're familiar with it, if they're using it, whatever. But if that, I think, we're here for you guys.

- [Matt] Within our stormwater management ordinance, within our subdivision ordinance, we allow low-impact design, which is basically smaller property footprints with, ideally, a wet pond or a natural area to preserve natural landscaping features. We had a development go that route in 2006. Developer from the Milwaukee area came up in this area, had it all designed, planned out, ran into some legal issues, the property then got put into, was basically, reclaimed by the bank, and other parties purchased it and went back more or less as a traditional subdivision.

- Was that the housing bubble?

- [Steve] It actually predated the housing bubble.

- It predated the housing. Other developers in the area were scoffing at this project because they were saying the market in the Greater Green Bay area doesn't support low-impact, green infrastructure type design. That sound like a mass majority, so one area that may be out there is educating developers and builders low-impact ideas or concepts, and showing that that call be economical. That you can get the same amount of lots plus putting in these natural amenities that are a brand official to the environment, ultimately. So it's actually an educational component.

- Do you have, within the stormwater ordinance or anything you know off, do you have incentives for them? Like landscaping points. A little out of my, in here but, anything.

- No.

- OK.

- Within the stormwater ordinance, if a property owner does a stormwater management feature, they can request a reduction in their stormwater fees up to 10 percent.

- But yeah, so resident debts.

- Basically it's a resident or--

- You get an engineer to certify it.

- Correct.

- Are you gonna get an engineer to certify your rain guard? So you can get a 10 percent storm insurance?

- An engineer?

- I'm just saying.

- My neighbor across the street use to drive the train, so yeah.

- [Steve] It's too bad you don't know any engineers.

- Drive a train? So, I mean, if you're along the Bay or along the Fox River, the incentive is greater that you can get upwards to a two-thirds reduction.

- Do you have any idea how much that would be for a typical house?
- A typical house has about 3,000 square feet of imperviousness, our current rate is just under \$95 a year. so 10 percent is 10 bucks. So...
- Isn't it, like, would it be possible, could you see in the future that there could be a relationship like that as green infrastructure saves the city money, people doing things like this or, you know, residential is one thing but, you know, big parking lots or, what do you call it? Not residential but the other version.
- Commercial?
- [Matt] Commercial?
- Commercial, doing things like this maybe the city could give them a tax break. I mean do you see a possibility of that in the future where people could work together to maybe get this thing going forward.
- [Matt] Some of our water quantity and quality projects that I mentioned on a large basis are trying to work with commercial entities on putting in some primarily, underground detention. Ideally, because of the restrictions on parking lots, you need so many parking stalls. Well OK, you have such a big building, you need the parking, stormwater management is always the last thing to be thought about. And when we redid Military Avenue, part of the consultants' responsibility was to implement biofilters, bioswales, some sort of best management practice, in that mile of reconstructed roadway. They left it till the end. Lo and behold there was no room for stormwater management. So, now we're trying to piecemeal and ordinances prior to 2001 for the city of Green Bay, get the water off my property as quickly as possible, out of sight, out of mind, not my problem. That was the mentality. Mentality since then where, what we're trying to do is educate people. No, keep the water on your site, treat it, maintain it, let it infiltrate. It has, its recharging the groundwater for your drinking water, it's removing pollutants, so we ultimately end up with a better, fishable, swimmable, drinkable, usable water watershed, so. But as of right now, are we looking at any type of incentives or things that, no, we're not. We can't afford it.
- We can save that question more for the council. When it comes to policy incentives--
- [Steve] I'd hate to be the wet blanket but that's inherent in my job description. What we have found is, it's basic nature, incentivizing something tends to tip the balance for the person who is already so inclined to do it, but for the person who's not so inclined to do it, if profit margin is the driving factor, incentivizing is not going to increase their profits, so they're less likely to do it. So when you look at carrot-and-stick, if you offer them the carrot, those who are already inclined to do that will probably take that carrot, those who weren't, you better be ready to hit them with a stick.
- But I don't want to forget this idea that--
- [Steve] Absolutely.
- It does save the city money to do these things.
- [Steve] When they're looking at, because the problem is more often than not, your developer isn't necessarily your occupier.
- Right.
- So your developer, even on a commercial endeavor, the business will hire a developer to design and build that facility for them and their basis for doing that is to get the building at their lowest possible cost, to drive

their profit margins. So with that in mind, if the incentive isn't going to save that money or is going to cost them extra, even though it's a good, long-term decision, long term doesn't pay it by the quarter when they have to pay dividends on their stakeholders.

- [Julia] And there's definitely, I mean way beyond my pay grade and stuff, it's more in the realm of, I think, policymakers, you know and finding creative ways and things to do, incentivize animistic, also to figure out that. And it totally depends on the community in my opinion. You know, there's one municipality in Milwaukee that's using their TIF, they're putting green infrastructure as part of their TIF policy. So that's unique to that, you know, so that's one type of policy, incentive to that. But obviously that doesn't fit everywhere, whatever, but I'm just saying, I think at that point that's, the doers the implementers and the rest of the other people are trying to figure out.

- We need to talk to Economic Development and others.

- You can put some stuff in columns. It also just depends on how they're implemented, too.

- Nobody's sure what to do with this as the next item. Possible action.

- Yeah, possible action. I think the results of the discussion suggest that we've learned a lot tonight and there's a lot more conversations to be had on an ongoing basis. I think that we'd like to make ourselves available to highlight any good work that y'all are doing, and particularly, if there's, you mentioned the green infrastructure on North Webster going forward. It would be really great to highlight future green infrastructure as examples for what residents and folks in the private sector can do. So, I think that rather than this being an end quit action, this is just the beginning of us helping to be a resource for you all. So thank you both for coming here tonight.

- [Steve] You're welcome.

- Thank you, Julia, for the presentation. And I guess, would we need to make a motion to do anything or can we just let this sit with discussion?

- Receiving to place on file.

- Yeah, receiving to place on file.

- [Steve] If the action can get thumbs up, you could simply have a new action item as agenda.

- So, receive the place on file.

- Thank you for coming.

- Yeah.

- Is there a second?

- I'll second it.

- Sound motion.

- All those in favor?

- All those in favor, say aye.

- Aye.
- Aye.
- Opposed? All right, that brings us to--
- Motion to adjourn.
- I'll second.
- Acclamation. Sound vote, all those in favor?
- Aye.
- Aye.
- We are adjourned.
- OK, so I have to ask, how--